

11.3.28 ✓



Oregon

John A. Kitzhaber, M.D., Governor

Department of Environmental Quality

811 SW Sixth Avenue

Portland, OR 97204-1390

(503) 229-5696

TDD (503) 229-6993

September 27, 1999

Mr. Drew Gilpin
Oregon Steel Mills
Manager of Environmental Services
P.O. Box 2760
Portland, Oregon 97208

USEPA SF



1187606

CERTIFIED MAIL

Re: Oregon Steel Mills Site: Request for
Performance of Remedial Investigation

Dear Mr. Gilpin:

This letter informs you of the results of our review of information regarding hazardous substance contamination at the Oregon Steel Mills facility located at 14400 N. Rivergate Blvd. in Portland, Oregon. The Oregon Department of Environmental Quality has determined that the Oregon Steel Mills site is a high priority for a remedial investigation and requests that Oregon Steel Mills perform a remedial investigation in accordance with the Environmental Cleanup Law, Oregon Revised Statutes (ORS) 465.200 *et seq.*

The Oregon Steel Mills facility is located within or near a portion of the Willamette River known as the Portland Harbor. A 1997 investigation revealed significant contamination of sediments within the harbor. DEQ has undertaken review of available information regarding properties throughout the harbor to identify potential sources of the sediment contamination. The results of DEQ's review, based on available site data, historical operations, (including the use of hazardous substances), and the presence of contaminants in adjacent sediments, for the Oregon Steel Mills facility are summarized in the enclosed Strategy Recommendation.

Available information indicates that a release of a hazardous substance has occurred or might have occurred at the Oregon Steel Mills facility and come to be located in Willamette River sediments. DEQ has determined that remedial action might be necessary to protect public health, safety, welfare and the environment and that a remedial investigation must be performed. The remedial investigation will fully identify, among other things, the source, nature, and extent of any releases of hazardous substances to sediments at or near the Oregon Steel Mills facility, and determine whether further remedial measures will be necessary at the Oregon Steel Mills facility.

DEQ proposes that your performance of the remedial investigation be governed by an agreement in the form of the enclosed Voluntary Agreement for a Remedial Investigation and Scope of Work. The facility's remedial investigation will be coordinated with harbor-wide sediments investigations currently being pursued by DEQ. This will require commencement of the remedial investigation at the Oregon Steel Mills facility in the near future.

DEQ requests that you review the enclosed Strategy Recommendation and standard Voluntary Agreement and Scope of Work, and inform DEQ whether you are willing to perform a remedial investigation by signing and returning the enclosed Intent to Participate form within 30 calendar days of mailing of this letter. Upon receipt of the Intent to Participate, DEQ will forward you a Voluntary Agreement and Scope of Work specific to the Oregon Steel Mills facility, and request that any questions regarding the agreement be resolved so that the agreement may be entered no later than 60 calendar days from the mailing of this letter.

Please note that, by signature and return of the Intent to Participate form, you would indicate a willingness to enter a Voluntary Agreement under the terms of the enclosed standard Voluntary Agreement. The second Voluntary Agreement that DEQ will forward you after receipt of the Intent to Participate will include the Oregon Steel Mills facility's name and other information specific to the facility. However, DEQ does not intend to substantially negotiate or revise the terms of the standard Agreement. The 60 days provided for entry of the Voluntary Agreement therefore should be sufficient.

Should you not indicate a willingness to perform the remedial investigation by return of the Intent to Participate form, or should you subsequently refuse to enter a Voluntary Agreement for the remedial investigation, DEQ will assume you are not willing to perform the remedial investigation. In this case, as with other facilities in the Portland Harbor, DEQ will exercise all remedies available to it under the Environmental Cleanup Law to ensure that necessary investigations are undertaken. These remedies include but are not limited to issuance of a unilateral administrative order requiring performance of the remedial investigation, and performance of the investigation by DEQ itself with subsequent cost recovery from liable parties.

Finally, please be advised that DEQ is required by ORS 465.330 to recover remedial action costs incurred by DEQ, including for site assessment activities. You will be receiving an invoice in the near future for DEQ's costs of preparing the Strategy Recommendation for the Oregon Steel Mills facility. Reimbursement of future DEQ costs will be provided through the voluntary agreement for the facility, if one is entered.

You may reach me at (503) 229-5648 if you have any questions related to the enclosed Strategy Recommendation.

Sincerely,



Eric Blischke
Coordinator
Portland Harbor Study Area
Waste Management and Cleanup Division

Enclosures

c: Kurt Burkholder, DOJ
Dave St. Louis, Manager, NWR Site Assessment Program
Mike Rosen, NWR Voluntary Cleanup Program
Gil Wistar, Coordinator, Site Assessment Program
ESCI File No.: 141

VOLUNTARY CLEANUP PROGRAM
INTENT TO PARTICIPATE

Identification of Site

Site Name: Oregon Steel Mills Site

Site Address: 14400 N. Rivergate Blvd., Portland, OR

Owner/Operator: Oregon Steel Mills

Mailing Address: Attn: Drew Gilpin, Oregon Steel Mills,
P.O. Box 2760, Portland, OR 97208

Intent to Participate

The undersigned intends to negotiate in good faith a written agreement with DEQ to provide for voluntary performance of a remedial investigation under DEQ oversight. The agreement will describe the project activities of each party and will require the undersigned to reimburse DEQ for oversight costs.

With this Intent to Participate, the undersigned does not admit or assume liability regarding the site.

Please execute this Intent to Participate in the space below and return it to:

Eric Blischke
Department of Environmental Quality
Waste Management and Cleanup Division
811 S.W. Sixth Avenue
Portland, OR 97204

By: _____
(signature of authorized
representative)

Name: _____
(print or type)

Title: _____

Company: _____

Date: _____

Telephone: _____

OREGON DEPARTMENT of ENVIRONMENTAL QUALITY
SITE ASSESSMENT ACTION - Northwest REGION

Facility Name: Oregon Steel Mills Inc. ECSI #: _____
Address: 14400 N. Rivergate Blvd.
Portland, OR 97208
PRP:
Company: Oregon Steel Mills
Name: Drew Gilpin - Manager of Env. Services Phone: 503-286-9651
Address: P.O. Box 2760
Portland, OR 97208
Action Date: 7/30/99
Report Type: _____

Preliminary Assessment:

_____ State _____ Federal _____ Voluntary _____ PAE _____ XPA

Screening:

X State _____ Federal _____ Spill

Note: Spill screenings may not require Strategy Recommendation

Recommended Action:

_____ NFA [Need management approval]
_____ Add to CRL
_____ Add to Inventory
_____ High Priority--Requires immediate response
X other Describe: High Priority sediment RI.

Report Writer: Tom Gainer

Headquarters

EPA

Other

Transmittal Date(s):

Report Supplement(s):

Sample
Analysis

Photos

Operating
Plans

Other

Supplemental Date(s):

Checklist:

X Strategy Recommendation _____ Letter to RP X SAPS X Map
X Data (if applicable) _____ Spill Report (if applicable)
_____ Site Report

Manager's approval: M. Roen

SITE ASSESSMENT PRIORITIZATION SYSTEM (SAPS) - SCORESHEET

Site Name: Oregon Steel Mills Inc.

Site Address: 14400 N. Rivergate Blvd.
Portland, OR 97208

ECSI Number: 141

EPA ID Number: OR0009106055

Site Evaluator: Tom Gainer

Date: 7/30/99

	<u>HIGH THREAT</u>	<u>MEDIUM THREAT</u>	<u>LOW THREAT</u>	<u>NO THREAT</u>	<u>CONF. VALUE</u>
1. Potential to Release (Route Characteristics)					
a. Haz. Sub. Containment	(9)	6	3	0	<u>B</u>
b. Depth To Aquifer	(6)	4	2	0	<u>A</u>
c. Distance to DW Well	6	(4)	2	0	<u>B</u>
d. Soil Permeability	(3)	2	1	0	<u>B</u>
e. Distance to Surface Water	(6)	4	2	0	<u>A</u>
2. Haz. Sub. Characteristics					
a. Source Quantity	(9)	6	3	0	<u>B</u>
b. Toxicity/Persistence	(9)	6	3	0	<u>B</u>
c. Water Solubility	(3)	2	1	0	<u>A</u>
3. Exposure Potential					
a. Groundwater Use	9	(6)	3	0	<u>B</u>
b. Land Use/Population	6	(4)	2	0	<u>A</u>
c. Surface Water Use	9	(6)	3	0	<u>B</u>
d. Sensitive Environments	(6)	4	2	0	<u>A</u>
e. Direct Contact	6	(4)	2	0	<u>B</u>
4. Evaluator Assessment of Threat	(13)	9	5	0	<u>A</u>

- Add the circled numbers to get the total SAPS score -

Confirmed Release Y X N

Total SAPS Score = 88 (out of 100 possible points)

Priority Associated with Score = H (H, M, L)

DISCUSSION:

Discuss your overall impression of the threat posed by the site. Include brief discussion of major factors such as potential or known releases, waste quantity, human and environmental targets, and use of nearby groundwater or surface water. Also discuss any important factors or considerations not addressed in the SAPS scoresheet. Discuss whether you feel the SAPS score generated for the site reflects the overall threat posed by the site to the surrounding population and environment.

River sediment contamination along the Oregon Steel Mills site appears to represent a significant potential threat to aquatic life within the river. It appears that site activities have contributed to sediment contamination. Evaluation of potential ecological threat of sediment contamination is considered a high priority.

RECOMMENDATION:

- ☒ Further Action - High Priority
- ☐ Further Action - Medium Priority
- ☐ Further Action - Low Priority
- ☐ No Further Action
- ☐ Refer To _____ for further consideration
- ☐ Other: _____

LISTING RECOMMENDATION

- ☒ Recommend proposal on Confirmed Release List
- ☒ Recommend proposal on Inventory
- ☐ Insufficient information to list on the Confirmed Release List
- ☐ Insufficient information to list on the Inventory
- ☐ Excluded from listing

DEQ SITE ASSESSMENT PROGRAM - STRATEGY RECOMMENDATION

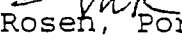
Site Name: Oregon Steel Mills, Inc.

Site CERCLIS Number: 009106055

DEQ ECSI Number: 141

Site Address: 14400 N. Rivergate Blvd.
Portland, OR 97208

Recommendation By: Tom Gainer, Voluntary Cleanup and
Site Assessment Section, DEQ Northwest
Region

Approved By: Michael E. Rosen,  Portland Harbor
Manager, DEQ Northwest Region

Date: August 5, 1999

NOTE: This site is downstream from a 6-mile stretch of the Lower Willamette River in which the U.S. Environmental Protection Agency (EPA) conducted a sediment study in 1997. This area, referred to as the *Portland Harbor*, is between the upstream ends of Sauvie Island (River Mile 3.5) and Swan Island (RM 9.5). The purpose of this Strategy Recommendation is to determine whether a specific hazardous substance release or a specific past operation at the site can be linked to contamination documented in sediments adjacent to the site. Because of this focus, the Strategy Recommendation may omit some historical site information, regulatory issues, or further-action conclusions that might otherwise be included in a DEQ Strategy Recommendation.

Background, Portland Harbor Sediment Evaluation

In September and October 1997, EPA's contractor, Roy F. Weston, Inc., collected 187 near-shore sediment samples within the Portland Harbor area defined above. Most samples (150) were collected as shallow grab samples within the upper 6 to 17 centimeters (cm) of sediments. 37 deeper composite core samples, from depths of between 55 and 139 cm, were also collected. All samples were analyzed for total metals, semi-volatile organic compounds (SVOCs), total organic carbon (TOC), and sediment grain size. Selected samples were also variously analyzed for organotins (TBTs), pesticides,

polychlorinated biphenyls (PCBs), chlorinated herbicides, and polychlorinated dioxins and dibenzofurans.

Based on analytical results from this study, which showed extensive sediment contamination, EPA is currently considering Portland Harbor for inclusion on the federal National Priority List (NPL - also known as Superfund).

Between late 1998 and mid-1999, DEQ examined EPA's analytical data to determine potential sources for sediment contamination in the Harbor. Potential sources associated with the most contaminated areas of sediment were sites already active in DEQ's Cleanup Programs.

DEQ categorized other areas of sediment contamination (i.e., those areas not thought to be associated with active Cleanup Program sites) by defining the areas:

- having the highest detected concentration of a given contaminant;
- with contaminant concentrations in the upper five percent of a given contaminant's detected concentrations; and
- having contaminant concentrations above an apparent "baseline range" most commonly detected throughout the harbor area.

DEQ categorized in this manner because there are no established freshwater sediment contaminant concentration guidelines or well-defined background contaminant concentrations for the harbor area. The contaminant "baseline range" was developed by examining the geometric distribution of concentrations for each contaminant detected. Any sediment concentrations that appeared to depart significantly from the ranges most commonly detected were suspected of lying near a potential contaminant source.

Oregon Steel Mills Sediment Activities

The Oregon Steel Mills (OSM) site is located approximately one-half mile downstream from the northern extent of the Portland Harbor Sediment study area (Figure 1). Therefore, no sediment samples were collected adjacent to the OSM site during the EPA's 1997 Portland Harbor Sediment Investigation. However, OSM collected six sediment samples in the Willamette River adjacent to their property in August 1997 in preparation for their October 1998 dredging activities (US Army Corps of Engineers permit 97-1343).

Analytical results of the pre-dredging sediment samples are summarized in Table 1 (attached). OSM's data shows concentrations exceeding baseline Portland Harbor Sediment levels of cadmium, lead, zinc, and polychlorinated biphenyls (PCBs). It is unclear what the post-dredging sediment concentrations are, although it is likely that elevated levels remain in place.

Approximately 728 cubic yards of sediment, removed to a depth of five feet, was dredged around OSM's water intake pipe at River Mile 2.3 and placed on an on-site containment pad. Dredging operations resulted in an oil sheen on the river at the location shown in Figure 2; according to information provided by OSM, the dredging contractor apparently thought the liberated oil was bunker C type petroleum.

Following dredging, eight samples were collected and analyzed from the sediment stockpile. Note that approximately 131 cubic yards of soil was mixed with the dredged sediment to "dry the dredging sediments out so as not to be released into the River during the off-loading process." Although the soil mixing reduced contaminant concentrations, the stockpile mixture showed elevated levels of total petroleum hydrocarbons as oil (TPH-Oil), low-molecular weight polynuclear aromatic hydrocarbons (LPAHs), cadmium, chromium, lead, and zinc. Pesticides and PCBs were not detected. OSM is currently assessing the final disposition of the sediments.

Based on a qualitative description provided by OSM to DEQ, creosote was apparently encountered during OSM's previous dredging activities in May 1986 about 100-150 feet offshore in the Willamette River. The dredge encountered a pocket of debris and creosote approximately three feet below sediment surface that resulted in oil droplets and a sheen on the water surface. Dredging was discontinued in this area and no further investigation was conducted. If the material encountered was creosote, it did not likely originate from the OSM facility since they did not use creosote and the source of creosote in the sediment is unclear.

Operational History

Gilmore Steel, Inc. purchased the undeveloped 158-acre Rivergate subject property from the Port of Portland in 1969. In 1987, Gilmore Steel, Inc. legally changed its name to Oregon Steel Mills, Inc. From 1969 to 1980 Gilmore Steel utilized a direct reduction process to manufacture metallized pellets for use in the electric arc furnace. A storage pond held ore slurry prior to its reduction and introduction into the electric arc furnace. The slurry pond's contents, which apparently was not a solid or hazardous waste, was excavated and sold between 1984 and 1988.

OSM currently manufactures steel sheets from scrap metal. The following is a partial list of materials/wastes that are used/generated on site:

- Alumina
- Antifreeze
- Automotive batteries
- Shot blast material
- Diesel fuel
- Electric arc furnace dust (hazardous waste K061)
- Electrodes
- Gasoline
- Hydraulic fluid/oils
- Kerosene
- Metals- cadmium, chromium, copper, iron, lead, manganese, molybdenum, nickel, vanadium, and zinc
- Paint and thinners
- Safety Kleen solvent

Table 2 presents data from EPA's toxics reporting inventory (TRI) database, including Chemicals Released To The Environment By Year and Discharge of Chemicals into Streams.

Six test pits were excavated six to ten feet below ground surface in October 1994 to evaluate soil quality in OSM's scrap yard, located in the eastern part of the site. Analysis of soil samples showed elevated levels of TPH, barium, chromium, copper, lead, manganese, and nickel. Soil excavated for a September 1996 construction project in this eastern part of the site showed elevated levels of TPH and detected PCBs, tetrachloethene, and xylenes. Both of these sampling activities were located approximately one-half mile from the river, so contamination of stormwater runoff from surface soil would be the most likely transport mechanism to river sediments.

Regulatory History

Spills

The following recent spills were reported to the DEQ:

Spill Date	OERS No.	Quantity/Type	Reached River?
12/23/97	97-3100	15 gal. hydraulic oil	yes
12/29/97	97-3121	40 gal. diesel	no
9/9/97	97-2285	500 gal. gasoline	no
6/8/97	97-1518	200 gal. sludge	no
1/14/98	98-105	Sheen on Willamette	yes
11/24/98	98-2736	45 gal. hydraulic oil	no
11/15/98	98-2836	300 gal. hydraulic oil	no

The 1997 500-gallon gasoline spill was located ~600 feet east of river. Contaminated soil was removed and disposed of off-site. Groundwater was impacted in the vicinity of the spill and groundwater monitoring is continuing. Groundwater monitoring conducted in November 1998 showed 14 micrograms per liter (ug/L) benzene and 116 ug/L methyl-tert-butyl-ether in the downgradient well, indicating that the downgradient extent of the small plume has not been determined. OSM's consultant recommended installation of another downgradient well and continued monitoring of natural attenuation. Contamination of river sediment is unlikely due to the distance from the plume to the river.

A sheen was observed on the Willamette River on January 14, 1998. The source was unknown, although flushing of the stormwater pipe was suspected.

RCRA Issues

OSM is a hazardous waste generator (ID ORD009106055) under RCRA. On August 21, 1992, an EPA contractor, SAIC, issued a RCRA Preliminary Assessment for the OSM site. The report identified 18 solid waste management units (SWMUs) at the facility. Twelve of the 18 SWMUs were recommended for no further action, and the remaining six SWMUs (listed below) were recommended for further action:

<u>SWMU Number</u>	<u>Description</u>
5	Former PCB Storage Shed
6	Scarfig Area Storage Ponds
8	Solid Waste Landfill
11	Melt Shop Furnace Emission Controls
13	Vehicle Maintenance Accumulation Area
18	Scrap Metal Piles

The former PCB storage shed was listed as a medium concern by SAIC because PCB-contaminated debris, sorbent pads, and protective clothing (from removal of capacitors by OSM employees) was thought to have been in piles prior to containment in drums. OSM subsequently claimed that the PCB-contaminated material was placed directly into drums and there have been no releases from the PCB storage shed. PCBs were not analyzed in 1997 by OSM in the in-place sediment and they should be, considering the PCB-related activities conducted on site and the PCBs detected in soil in 1996 located in the eastern portion of the property.

The OSM site was added to CERCLIS, but the EPA has deferred further CERCLA action pending resolution of these site RCRA issues.

Underground Storage Tanks (USTs)

One 5,000-gallon gasoline UST located approximately 1,600 feet east of the Willamette River was removed in January 1996. Four monitoring wells were installed, and elevated levels of gasoline constituents continue to be detected in two downgradient wells. It appears that the extent of groundwater contamination has not been fully delineated, although contamination of river sediment seems unlikely.

According to OSM, four USTs (two gasoline and two diesel) were removed at OSM in 1985. This activity predates DEQ's UST program and no information regarding decommissioning activities was readily available.

Storm/Process Water Discharge

OSM has permits with the DEQ for process and storm water discharge and a municipal wastewater permit with the City of Portland. As shown on Figure 3, there are four outfalls at the OSM facility, three of which discharge to the Willamette River. The fourth outfall discharges towards the east. From 1993 to present there have been several violations of both process and storm water permits, which allow for discharge of certain quantities of oil and grease, metals, and suspended solids. Considering documented spills and soil contamination on site, the stormwater outfalls have likely contributed towards sediment contamination.

Air Quality

OSM has an air contaminant discharge permit with the DEQ that allows for emissions with certain quantities of particulates and metals.

Site Hydrogeology

The site lies in the northern-most Portland Basin, a major north-southeast trending sediment filled structural depression found in the northern part of the Willamette River valley and adjoining Columbia River valley (Swanson et al, 1993). The basin is filled with recent alluvium, Pleistocene cataclysmic flood deposits, Miocene to Holocene nonmarine sedimentary rocks, and is underlain by Eocene to Miocene volcanic and sedimentary rocks that are exposed along the basin margins.

The youngest deposits are recent alluvium (silt, sand and gravel mixtures) characteristic of an active fluvial environment. These are made up of shoreline, river channel, and adjacent floodplain deposits.

Terraces that rise 50 to 100 feet above the northeastern shore of the Willamette were formed during Pleistocene cataclysmic flooding related to glacial Lake Missoula, and consist of unconsolidated

mixtures of silt, sand, and gravel that generally are coarser than the recent deposits. Fill comprised of fine to medium sands and silt was also placed in many areas along the river during site development. The total thickness of recent alluvium and flood deposits appears to be about 100 feet in the vicinity of the site.

Coarse gravel to conglomerate of the Troutdale Formation, deposited by the ancestral Columbia River, underlies the cataclysmic flood deposits and appears to be about 100 feet thick in the vicinity of the site. Sandy River mudstone underlies the Troutdale Formation and appears to be about 100 feet thick. Basalt of the Columbia River Basalt (CRB) group forms the basement rock of the Portland Basin, and may be as much as several hundred feet thick in the vicinity of the site.

Aquifers in the unconsolidated sedimentary deposits generally are unconfined and localized due to heterogeneity of the deposits. The Troutdale Formation is an important regional aquifer and is widely tapped for both potable and non-potable uses. Interbedded Claystone and/or siltstone, or cementation often promotes confined aquifer conditions within the Troutdale Formation. Deep wells installed in fractured CRB can be very productive and important supply wells. Site elevation is about 30 feet above mean sea level.

Monitoring wells on the OSM property indicate that groundwater is generally less than 10 feet below ground surface and that shallow groundwater flows towards the Willamette River.

Pathway Summary

The OSM facility lies in an area of mixed industrial and commercial use. There are no residences within 1/4 mile of the facility.

A perimeter fence limits public site access. However, utility trench workers could potentially be exposed to subsurface contaminants through direct contact, inhalation, or incidental ingestion. OSM employees and/or trespassers could potentially be exposed to surface contaminants through direct contact, inhalation, or incidental ingestion.

Oregon Water Resources Department has well logs for two domestic wells within one mile of the OSM facility; specific well locations were not readily available, although they are likely cross- or upgradient from the OSM site. The domestic wells are drilled to depths of 190 and 350 feet below ground surface. It does not appear that these domestic wells would be impacted from contamination at the OSM site.

The nearest significant wetland is located adjacent to the site along the Willamette River. The east bank of the Willamette River from the subject site to the confluence with the Columbia River about 2.5 miles downstream is predominantly wetlands. The Ramsey Lake wetlands start approximately one mile east of the subject site.

Kelly Point Park is located about 1.5 miles northeast (downstream) of the site.

Both recreational and subsistence fishing occur within the Lower Willamette River. Commercial fishing within the Portland Harbor is limited to a small Pacific lamprey fishery. Recreational boating, water skiing, swimming, and beach use also occur within the Harbor.

The Lower Willamette River provides habitat for 39 fish species, including populations of wild cutthroat trout, rainbow trout, and mountain whitefish. White sturgeon are plentiful within the Harbor. The Harbor is also an important migratory corridor, nursery habitat, and adult foraging area for two runs of chinook salmon, two runs of steelhead trout, and individual runs of coho and sockeye salmon.

Upper Willamette River populations of chinook and steelhead, which migrate through the Harbor, are listed as threatened species under the Federal Endangered Species Act. The Pacific lamprey is considered a federal species of concern.

Great blue herons, cormorants, osprey, mergansers, kingfishers, peregrine falcons, and bald eagles routinely forage within the Harbor. The area is also part of the wintering range for the Aleutian Canada goose. All are protected under the Migratory Bird Treaty Act. The peregrine falcon is federally listed as an endangered species, while the Aleutian Canada goose is federally listed as threatened species. The bald eagle also is a threatened species, but was recently proposed to be removed from this list.

There is little data on the nature and extent of the benthic community within Portland Harbor sediments. However, it is known that contamination in the benthos, which is a protected beneficial use, can be the source of food-chain effects that radiate up to the species listed above, including humans.

The Lower Willamette River is water quality limited for the following toxic compounds:

- Dioxins/furans (water column and sediments);
- Mercury (fish tissue);
- Pesticides (water column and sediments);
- Polynuclear Aromatic Hydrocarbons - PAHs - (water column and sediments); and
- Trace metals (water column and sediments).

DEQ's Water Quality Division is developing Total Maximum Daily Load requirements (TMDLs) within the lower Willamette River for these contaminants. A TMDL for 2,3,7,8-TCDD was established in 1991.

Conclusions/Recommendations

NOTE: As indicated previously, this review is limited to establishing a link between site activities and contamination in adjacent sediments. It does not necessarily represent a thorough review of available site data and the conclusions and recommendations presented below may reflect this limited focus.

The following conclusions are based on the contents of this review:

- It appears that site activities have resulted in sediment contamination adjacent to the site. Elevated concentrations of sediment contaminants adjacent to the site (cadmium, chromium, lead, zinc, PCBs, TPH-Oil, and LPAHs) are consistent with current and historical site activities.
- Discharges to the Willamette River by the following site activities have likely impacted river sediments: spills of petroleum products, storm water contaminated by metal, petroleum, and PCB-contaminated surficial soil, and manufacturing related airborne discharges.
- Use of the site's docks, possibly for conveyance of materials and boat fueling and maintenance, is a possible source of sediment contamination by routine or accidental activities.
- The subject property was undeveloped prior to Gilmore/Oregon Steel operations and there is a close correlation between sediment contaminants and site activities. While there may be potential contributors to the observed sediment contamination from upstream sources, it appears that the OSM site is a probable source for the contamination observed adjacent to the site.
- In addition to direct deposition of contaminants into or on to the river adjacent to the site, other possible migration pathways resulting in sediment contamination from the site include subsurface migration from spills.

Contamination of river sediments adjacent to the OSM may represent a significant threat to human health and aquatic life within the river. The specific nature and significance of these threats cannot be determined without further characterization and delineation of

contamination in groundwater, subsurface soil, and sediments. A Remedial Investigation (RI) is required to evaluate the potential ecological threat of the sediment contamination. It is recommended that once the full character and extent of site sediment contamination has been determined, a Risk Assessment, including sediment bioassays and bioaccumulation assessment, be conducted. The RI should evaluate potential upland site contaminant sources and past waste management practices. As necessary, the RI should present recommendations aimed at preventing potential further contamination of adjacent sediment. DEQ has determined that these actions warrant a high priority for follow-up.

The site is proposed for addition to DEQ's Confirmed Release List and Inventory due to the documented gasoline spill and associated groundwater contamination.

References

DEQ consulted the following general references in preparing this Strategy Recommendation:

1. Oregon Steel Mills response to DEQ Site Assessment Information Request, February 1999.
2. Portland Harbor Sediment Investigation Report, prepared by Roy F. Weston, Inc. for USEPA, May 1998.
3. Telephone log from OSM to DEQ concerning dredging activities, May 27, 1986.
4. DEQ LUST Database.
5. DEQ HWIMSY Hazardous Waste Generator Database.
6. DEQ SPINS Spill Database.
7. DEQ Water Quality files.
8. DEQ Air Quality files.
9. MetroScan Property Records, Multnomah County, Oregon.
10. US EPA Envirofacts Database.

Attachments

Table 1: River Sediment Concentrations (1997)

Table 2: TRI Chemical Release Data

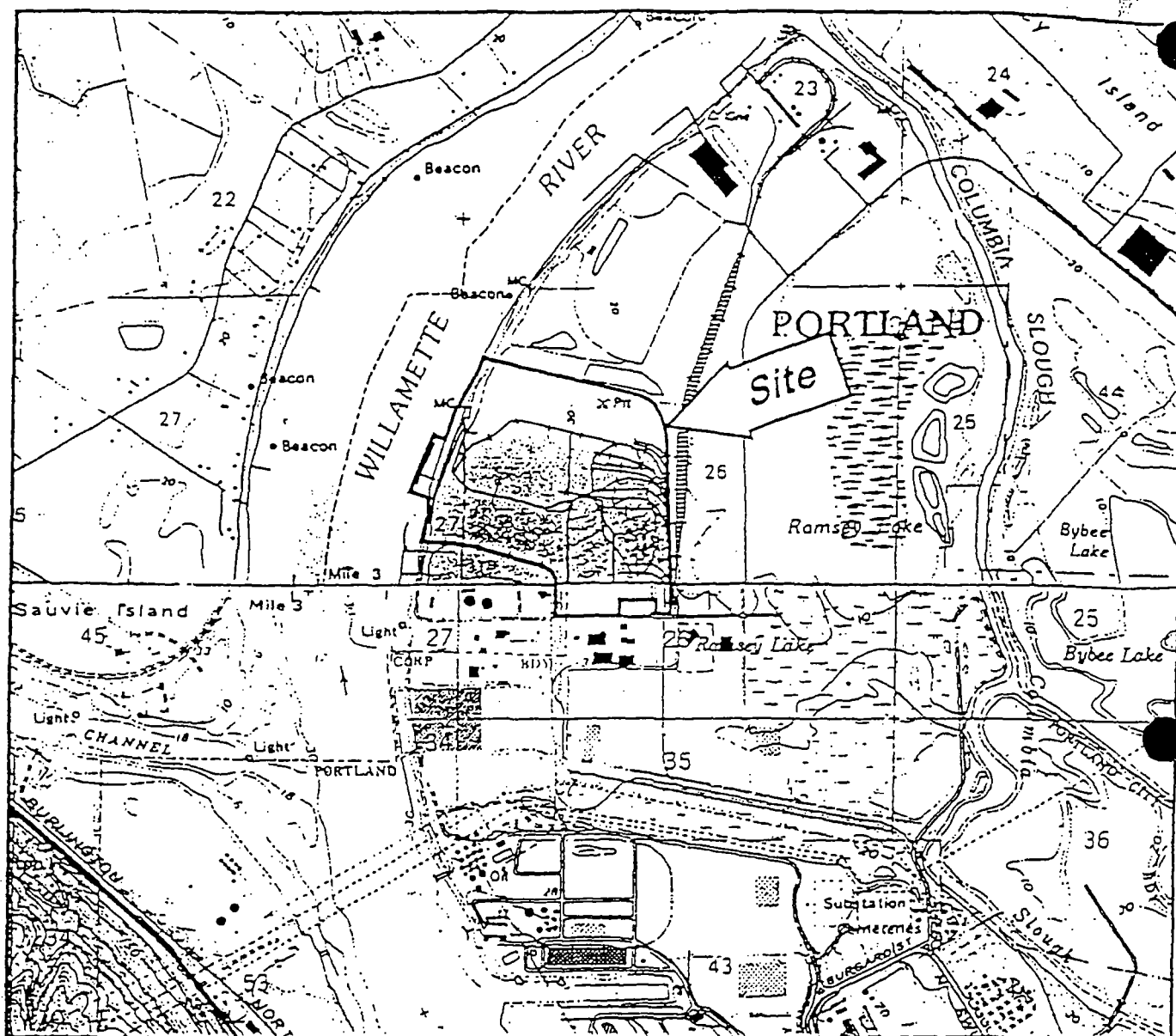
Figure 1: Site Location Map

Figure 2: Location of Contaminated Sediments

Figure 3: Discharge Locations

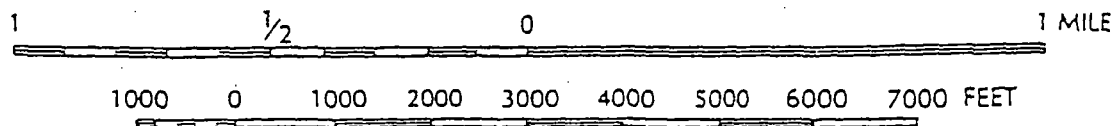
Site Location Map

Oregon Steel Mills



Base map prepared from the USGS 7.5-minute quadrangle of Linnton, Oregon, photo revised 1984, and Sauvie Island, Oregon, dated 1990.

SCALE 1 : 24 000



CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

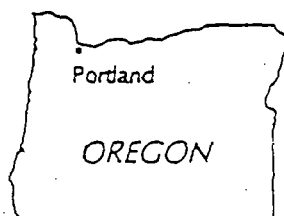
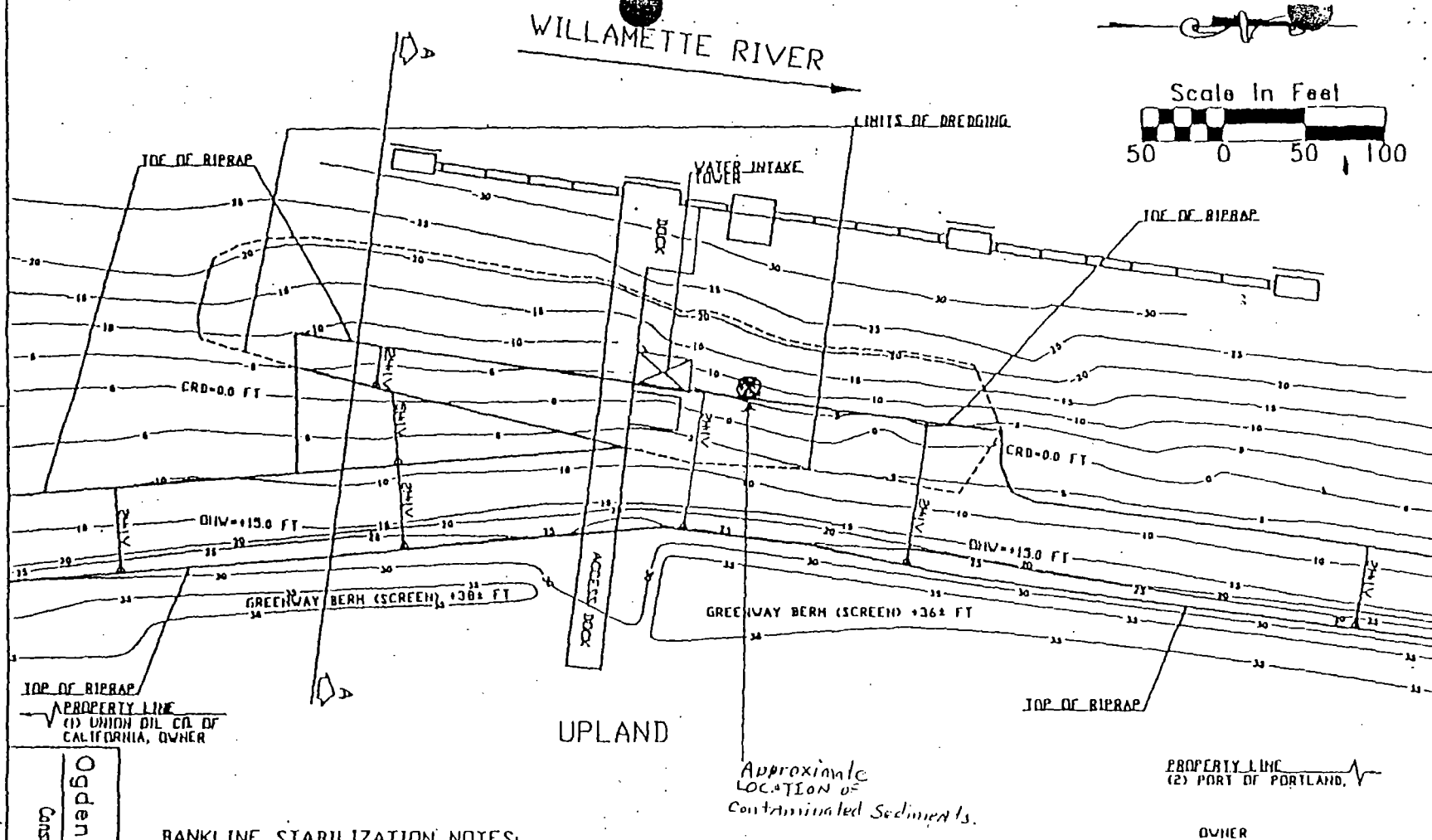


Figure 1

PURPOSE: MAINTAIN UNOBSTRUCTED
WATER INTAKE AND STABILIZE
ACTIVELY ERODING BANKLINE
AT COLUMBIA RIVER DATUM (CRD),
CRD IS 1.52 FT ABOVE NGVD
AT WILLAMETTE RIVER MILE 2.3
ADJACENT PROPERTY OWNERS:
1. UNION OIL CO. OF CALIFORNIA
2. PORT OF PORTLAND

FIGURE 2
SCALE: 1" = 100'



BANKLINE STABILIZATION NOTES:

- B1. TOPOGRAPHIC AND BATHYMETRIC SURVEY CONDUCTED BY ADVANCED AMERICAN DIVING SERVICES, MAY 1997.
- B2. NAVIGATION CHANNEL LOCATIONS WERE OBTAINED FROM CORPS CHART WR-1-150.
- B3. THE PURPOSE OF THE PROPOSED BANKLINE STABILIZATION IS TO STOP ACTIVE EROSION OF THE BANKLINE. EXISTING CONDITIONS PRODUCED BY RECENT FLOODING CAUSED UNACCEPTABLE SHOALING AT THE WATER SUPPLY WHICH IS AFFECTING MILL OPERATIONS. ONGOING ACTIVE EROSION IS THREATENING THE VEGETATED RIPARIAN GREENWAY BERM WHICH PROVIDES A VISUAL SCREEN AND SOUND BARRIER BETWEEN THE MILL AND THE RIVER.
- B4. OREGON STEEL MILLS PROPOSES TO STABILIZE THE BANKLINE WITH A RIPRAP REVETMENT. CONSTRUCTION WILL BE BY EITHER LAND OR WATER BASED EQUIPMENT INCLUDING A CRANE WITH A CLAMSHELL AND DACKHOES AS NEEDED. REVETMENT CONSTRUCTION INCLUDES ESTIMATED QUANTITIES AS FOLLOWS: EXCAVATION (7,800 CY TOTAL, 5,900 CY BELOW ORDINARY HIGH WATER (OHW)), CLEAN GRANULAR FILL (2,200 CY TOTAL, 600 CY BELOW OHW), 4 INCH MINUS BEDDING ROCK (5,700 CY TOTAL, 3,600 CY BELOW OHW), AND RIPRAP (10,700 CY TOTAL, 6,600 CY BELOW OHW).

Ogden Beaman & Associates, Inc.

Consulting in the development of ports, waterways,
and marine facilities

PROPOSED EMERGENCY DREDGING
AND BANKLINE STABILIZATION
IN: WILLAMETTE RIVER
AT: RIVER MILE 2.3
COUNTY OF: MULTNOMAH
APPLICATION BY: OREGON STEEL
MILLS, INC.
SHEET 4 OF 6 DATE: 9/11/97

Approximate
90 m Mixing Zone

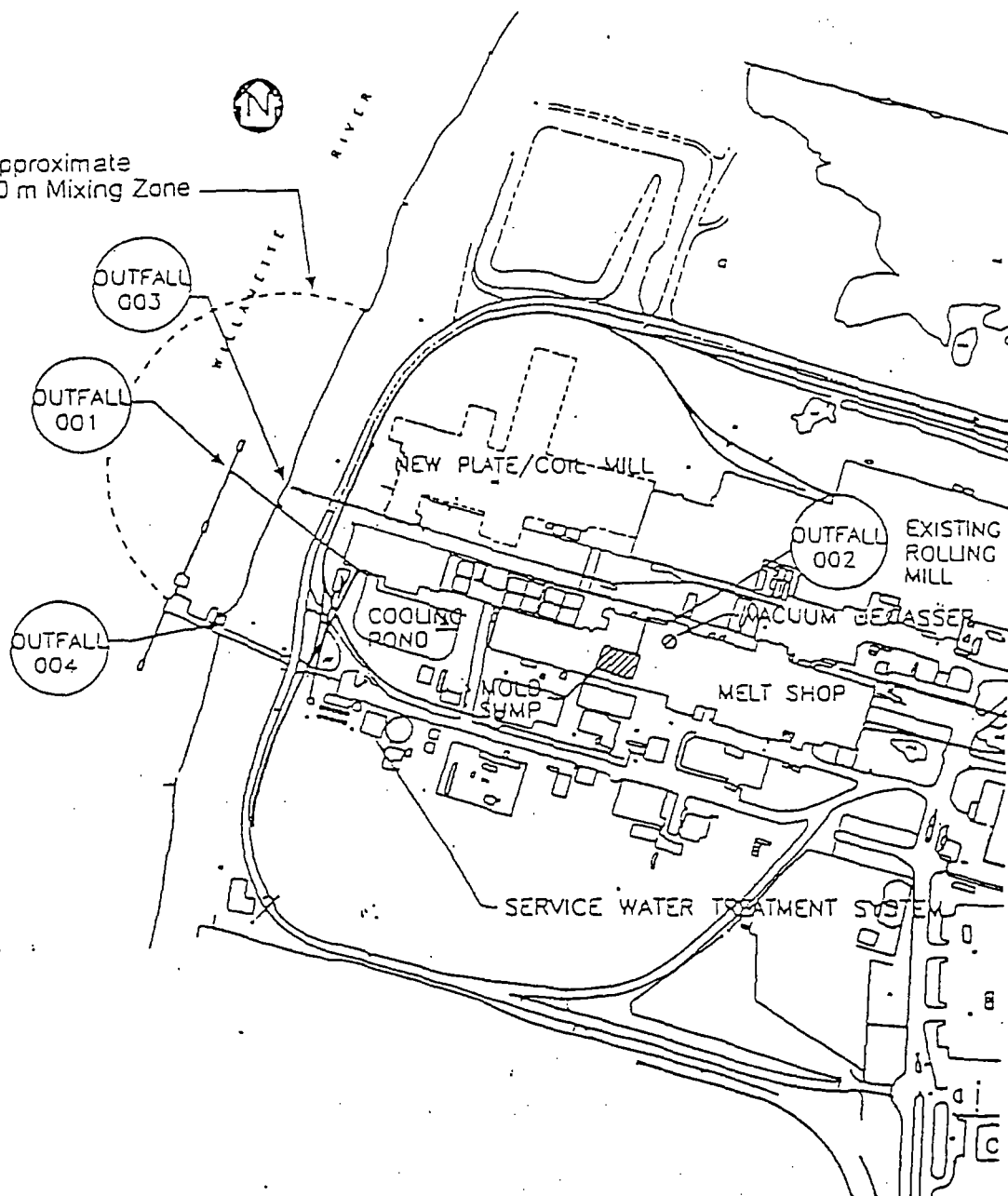


FIGURE 3
OREGON STEEL MILLS
RIVERGATE FACILITY DISCHARGE LOCATIONS



TABLE 1
River Sediment Contaminant Concentrations (1997)
Oregon Steel Mills

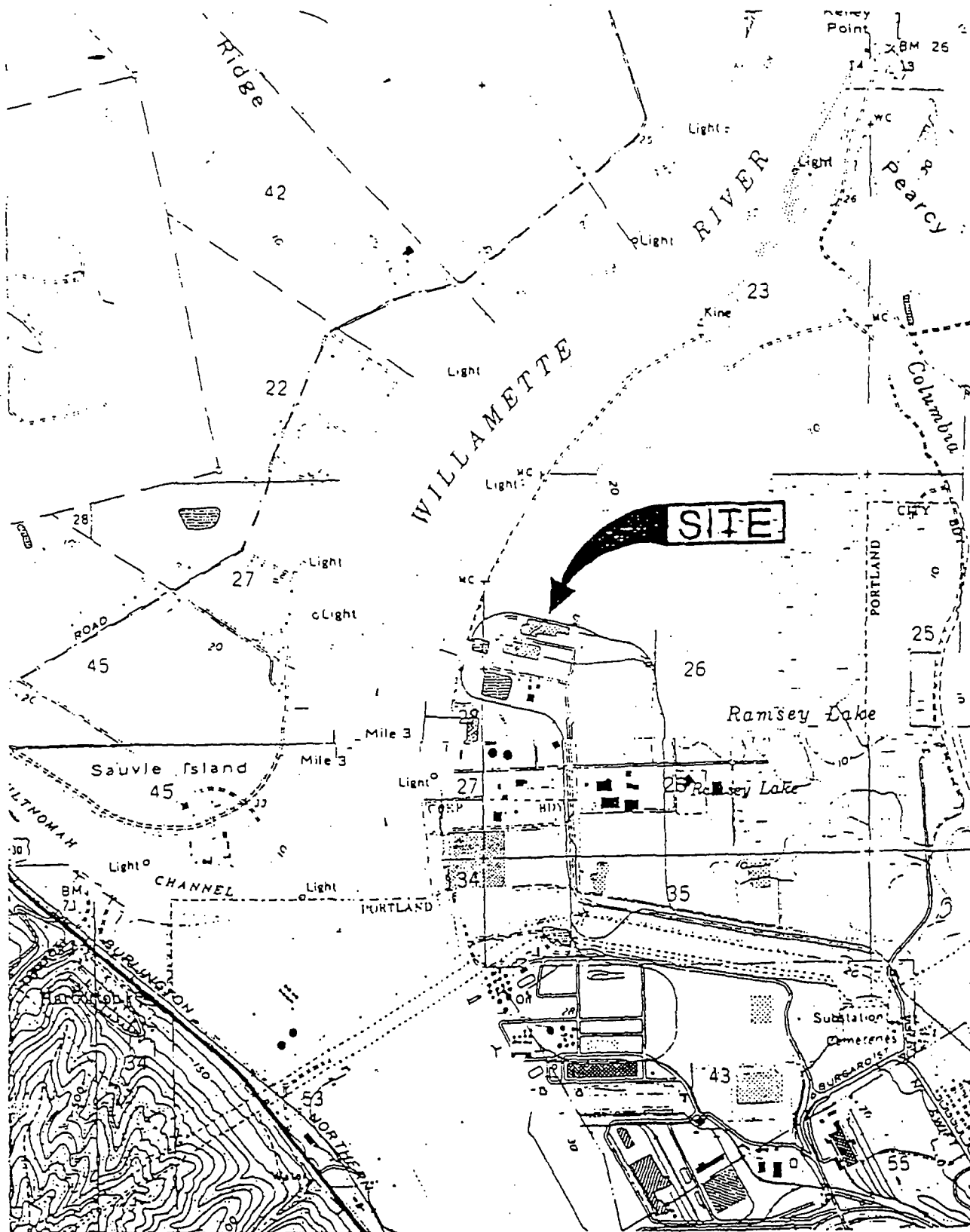
Contaminant	Units	Composite A	Composite B	Apparent Portland Harbor Sediment Baseline Maximum Value
Antimony	ppm	0.45	0.1	<5
Arsenic	ppm	3.8	3.3	<5
Cadmium	ppm	1.35	0.45	0.6
Chromium	ppm	38.3	22.1	41
Copper	ppm	30.9	33.5	60
Lead	ppm	101	36	30
Mercury	ppm	0.07	0.07	0.1
Nickel	ppm	18.1	20	32
Silver	ppm	0.4	0.2	1.4
Zinc	ppm	474	165	118
2-Methylnaphthalene	ppb	17	9	150
Dibenzofuran	ppb	8	12	100
LPAHs (total)	ppb	159	155	700
HPAHs (total)	ppb	1650	1020	2400
DDTs (total)	ppb	<21	<15	220
PCBs (total)	ppb	1971	821	<180
TOC	%	1.06 to 1.99		2

TABLE 2
TRI Chemical Release Data
Oregon Steel Mills

Names and Amounts of Chemicals Released to the Environment by Year.

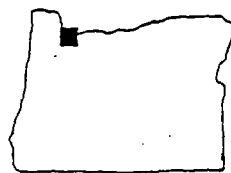
Please note that all release amounts are reported in pounds. For all releases estimated as a range, the mid-point of the range was used in these calculations. NR - signifies that there were no releases reported for the corresponding media for the given reporting year. Rows with all "0" or "NR" values were not listed.

Chemical Name	Media	1996	1995	1994	1993	1992	1991	1990	1989	1988	1987
<u>METHYL ETHYL KETONE</u> (TRI Chemical ID: 000078933)	Air - Fugitive	1020	NR	NR	1218	1100	NR	NR	0	0	NR
<u>METHYL ETHYL KETONE</u> (TRI Chemical ID: 000078933)	Air - Stack	9182	NR	NR	10961	10100	NR	NR	5600	17000	NR
<u>ALUMINUM OXIDE (FIBROUS FORMS)</u> (TRI Chemical ID: 001344281)	Air - Fugitive	NR	NR	NR	NR	NR	NR	NR	NR	1000	79000
<u>ALUMINUM OXIDE (FIBROUS FORMS)</u> (TRI Chemical ID: 001344281)	Air - Stack	NR	NR	NR	NR	NR	NR	NR	NR	370000	0
<u>ALUMINUM OXIDE (FIBROUS FORMS)</u> (TRI Chemical ID: 001344281)	Other On-Site Land Releases	NR	NR	NR	NR	NR	NR	NR	NR	3300000	6900000
<u>ALUMINUM (FUME OR DUST)</u> (TRI Chemical ID: 007429905)	Air - Fugitive	NR	2887	445	147	NR	NR	NR	NR	NR	250
<u>ALUMINUM (FUME OR DUST)</u> (TRI Chemical ID: 007429905)	Air - Stack	NR	217	190	185	NR	NR	NR	NR	NR	0
<u>LEAD</u> (TRI Chemical ID: 007439921)	Air - Fugitive	NR	488	1455	1425	1120	13000	4144	17050	24000	NR
<u>LEAD</u> (TRI Chemical ID: 007439921)	Air - Stack	NR	710	622	610	250	250	250	250	750	NR
<u>LEAD</u> (TRI Chemical ID: 007439921)	Transfers Off-Site to Disposal	NR	NR	NR	NR	210000	435000	NR	NR	19000	NR
<u>LEAD</u> (TRI Chemical ID: 007439921)	Water	NR	114	7	72	250	0	0	0	0	NR
<u>MANGANESE</u> (TRI Chemical ID: 007439965)	Air - Fugitive	NR	1469	1982	1884	1500	9000	4463	12130	17250	NR
<u>MANGANESE</u> (TRI Chemical ID: 007439965)	Air - Stack	NR	949	832	789	0	250	250	250	250	NR
<u>MANGANESE</u> (TRI Chemical ID: 007439965)	Transfers Off-Site to Disposal	NR	NR	NR	NR	260000	300000	NR	NR	37000	NR
<u>NICKEL</u> (TRI Chemical ID: 007440020)	Air - Fugitive	58	68	15	15	250	5	250	500	250	250
<u>NICKEL</u> (TRI Chemical ID: 007440020)	Air - Stack	1	6	5	5	5	250	5	250	0	0
<u>NICKEL</u> (TRI Chemical ID: 007440020)	Transfers Off-Site to Disposal	NR	NR	NR	NR	1700	2400	NR	NR	NR	NR
<u>NICKEL</u> (TRI Chemical ID: 007440020)	Water	53	16	0	8	5	0	0	0	0	0
<u>BARIUM</u>											



BASE MAP FROM: USGS 7.5' QUADS. SAUVIE ISLAND AND LINNTON, OR (1975,1984)

SCALE: 1"=2000'



LOCATION

OREGON STEEL MILLS
PORTLAND, OREGON
LOCATION MAP

FIGURE 1-1

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